

## THE COMMON BLUE DAMSELFLY *ENALLAGMA CYATHIGERUM* AND OTHER ODONATA RECORDS IN SHETLAND

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THE ONLY member of the order Odonata resident in Shetland is one of the damselflies, Zygoptera, the Common Blue Damselfly *Enallagma cyathigerum* (Charpentier). This is one of the most commonest and most widespread of the damselflies, especially in Scotland, where it is often the only species present at some sites (Hammond, 1983). The first published reference to its occurrence in Shetland is by Godfrey (1899) who said the species was "observed in some abundance at the lochs of North Delting and the peat-holes of Gluss Isle" in 1896 and 1897. Unfortunately, the exact sites involved were not recorded. Since then nothing further has been published about the occurrence of the Common Blue Damselfly in Shetland. Shetland records are usually lacking in published distribution maps (e.g. those in Hammond, 1983), although some recent records are held by the Biological Records Centre, who are responsible for the compilation of dot distribution maps.

Three species of dragonfly have also been recorded in Shetland and their occurrence illustrates the vagrancy potential of certain species of Odonata. The stronger-flying and more highly migratory dragonflies are more likely to occur as vagrants than the damselflies, and they are unlikely to be confused with Shetland's resident damselfly. However, it is important that observers are aware of the potential for other species to be recorded in Shetland.

### Damselfly sites

The following sites are all those which are currently known for the Common Blue Damselfly in Shetland. Records from areas within 1km of each other have been included as one site and any proof of breeding and indication of numbers involved are also included. Many of the sites are also breeding sites for Red-throated Divers *Gavia stellata* (L.) which are particularly susceptible to human disturbance.

#### Loch of Houlland, Eshaness (10-km square HU 27)

Most records come from one or more of the small un-named lochans to the south-east of the Loch of Houlland, although it is not always clear exactly which body of water is referred to. Six, including a mating pair, were recorded here on 24.vii.1983 (C. Gomersall). In 1986 there were "dozens" recorded on 13.vii (M. Henry), and seven, including a mating pair, recorded on 21.vii. (D. Carstairs). Dave Carstairs also recorded three blue individuals at the Loch of Houlland itself on the last date.

#### Hamnavoe Hills, Eshaness (10-km square HU 28)

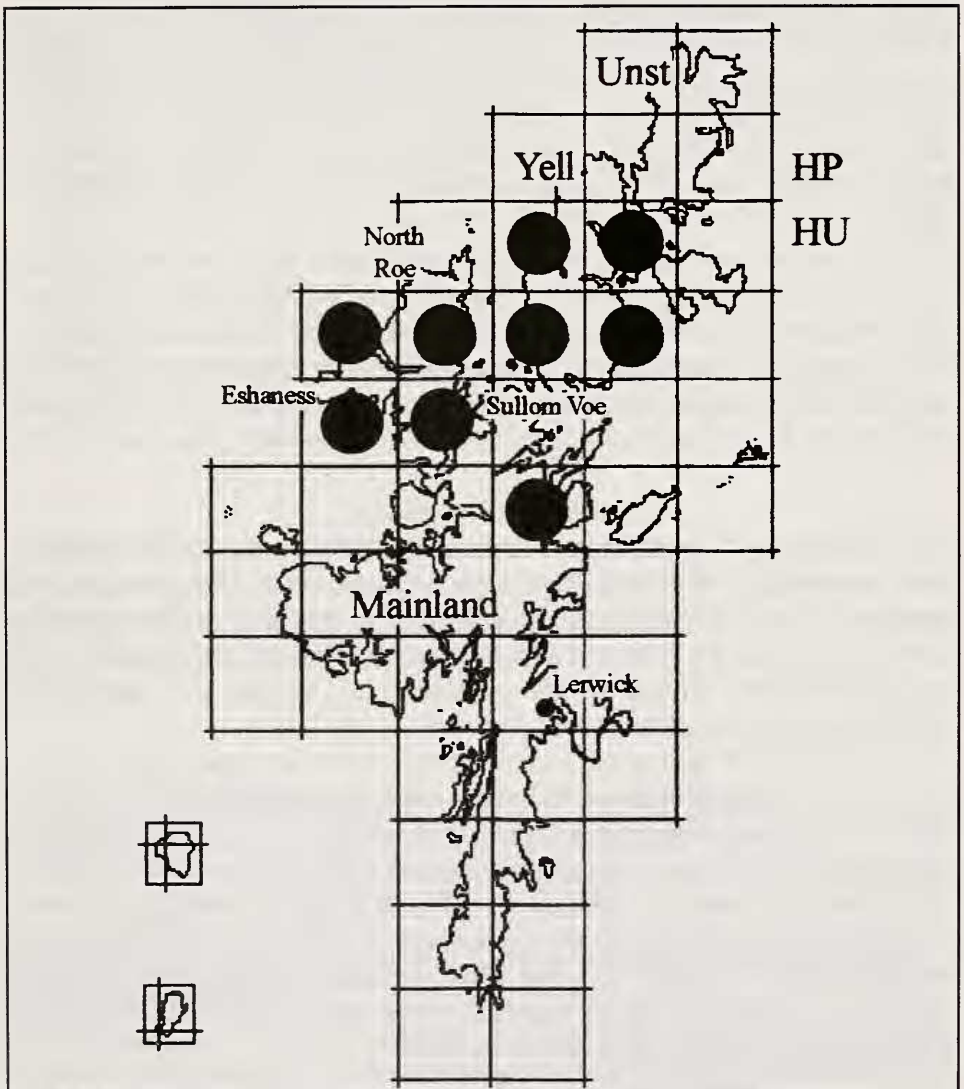
A blue individual was recorded at a lochan here on 23.vii.1983 (R. Wynde).

### Tingon (10-km square HU 28)

There are several sightings at one regularly visited site with records dating back to at least the 1970s and the most recent record in 1994 (P.M. Ellis, J.D. Okill). In July 1992 damselflies were also recorded at three adjacent sites about 1km to the north-east (H. Harrop).

### Gluss Isle (10-km square HU 37)

This is one of the original sites mentioned by Godfrey (1899). Local residents have also reported more recent sightings from within the last 30 years (per J. Swale). Most recently, several damselflies were seen here on one day in the warm weather of June 1992 (W. Scott).



Distribution of Common Blue Damselfly *Enallagma cyathigerum* in Shetland by 10km squares.

**Scatsta (10-km square HU 37)**

There are occasional sightings, most recently in 1988 (J.D. Okill). It was presumably this site that was referred to by a correspondent of Bobby Tulloch's in the 1960s, and it is also presumably one of the sites referred to by Godfrey (1899).

**Many Crooks, North Roe (10-km square HU 38)**

In early June 1992 damselflies were seen at four small lochans all within 0.5km of each other (J. Swale). At one lochan there were over 100 individuals, including many copulating pairs and newly emerged (teneral) adults. At the two sites nearest to this one there were also copulating pairs and teneral individuals, but only seven and ten individuals respectively were present. At the most remote site of the four there were only two blue individuals.

**Beorgs of Skelberry, North Roe (10-km square HU 38)**

There are occasional sightings, most recently in 1989 (J.D. Okill).

**Mill Burn, Laxo (10-km square HU 46)**

One blue individual was seen flying along the burn in June 1992 (F. Spence). The sighting is unusual in that it is about 10 km from any other site, whereas all other sites of sightings are in small clusters.

**Hill of Garth (10-km square HU 47)**

There are occasional sightings at this site, which is now on the edge of the Sullom Voe Terminal (P.M. Ellis, J.D. Okill). In July 1986 there were only about four individuals present, but this did not include a copulating pair. The most recent sighting was in 1987. This is presumably one of the sites referred to by Godfrey (1899) last century. In addition, the Scottish Natural Heritage office in Lerwick holds a file note which states that locals could recall seeing large numbers of damselflies around peat pools "near the American coastguard station" (now demolished) in the 1960s and 1970s. This presumably refers to the same site.

**Cro Water and Lunga Skolla, Yell (10-km square HU 48)**

Damselflies have been recorded at some of the small lochans to the south of Cro Water but not in recent years (R. Tulloch). There are also records from two adjacent sites about 1km away, in the vicinity of the burn of Lunga Skolla (J. Ballantyne). This burn flows out of Cro Water and damselflies have been seen here on 29.vi.1978, 10.viii.1984 (four individuals), 17.vi.1985 and 14.viii.1993 (two).

**Burn of Arisdale, Yell and Burn of the Kame, Yell  
(10-km square HU 48)**

Singles seen along the mid-reaches of the Arisdale valley in 1988 (P.M. Ellis) and along the Burn of the Kame in June 1992 (S. Smith) were most likely wanderers from other Yell sites.

**Kame of Sandwick, Yell (10-km square HU 48)**

Damselflies were recorded at a small lochan at the south end of this ridge on 5.vii.1982 (C. Gomersall) and in July 1994 (RSPB).

**Una Stacka Houlla, Yell (10-km square HU 48)**

There are two records from this area, on 4.vii.1977 (J. Ballantyne) and further sightings of single damselflies at two lochans about 0.5 km apart on 3.vii.1983 (C. Gomersall). The grid references imply three different pools were involved in the sightings.

**Upper reaches of Burn of Setter and Shinniwersdale, Yell  
(both 10-km square HU 48)**

Singles seen flying along the appropriate burns in June 1992 (S. Smith) were probably wanderers from other sites.

**Graveland, Yell (10-km square HU 49)**

Two blue individuals were recorded at a small lochan near Birka Lees on 8.vii.1989 (G. Bundy). There are other sightings by the Leicester Polytechnic expeditions to the south of this area at Raga, but without any details.

**Laxa Burn at Mid Yell (10-km square HU 59)**

One seen flying along the stream at the small dam in June 1992 (S. Smith).

The known sites so far fall into three main areas. There are a series of records from the north-west coastal areas of Northmavine (the sites at Eshaness, Tingon and North Roe), a few sites around the inlet of Sullom Voe (the sites at Gluss Isle, Scatsta and Hill of Garth) and a number of sites in the southern half of the island of Yell. One site, at Laxo, does not fall into any of these broad categories. What is perhaps most surprising is the relatively restricted area the sightings fall in. Although limited research and increased awareness over the last few years have increased the number of known sites, they still fall in a small area of north Mainland and south Yell. There is no obvious reason why the damselflies are restricted to this area of Shetland. Indeed, the richer more eutrophic waters of south Mainland, or the more heavily vegetated lochs of west Mainland would appear to be more likely for Odonata. The discovery of populations of damselflies outside the known areas is not impossible, but is highly unlikely that they will be discovered in relatively populous south Mainland.



### Proof of Breeding

Proof of breeding can be obtained in a number of ways. Most obviously the aquatic, immature stages can be located. However, locating nymphs would require netting and would probably cause an unwarranted degree of disturbance to the breeding site. One way of proving the presence of nymphs without netting is by locating exuviae, the final shed skin of a nymph which is usually left on vegetation close to the water's edge. However, although searching for exuviae has an advantage over searching for adults as it need not be restricted to fine weather, finding exuviae in Shetland before they are blown away may be difficult! Adult sightings may also provide proof of breeding in two ways: sightings of newly emerged, teneral adults or of copulating pairs can be taken as proof of breeding as neither are likely to travel any distance from the true breeding site.

Of the approximately 20 sites where damselflies have been recorded in Shetland, the documented evidence available only proves breeding at three: Loch of Houlland, Many Crooks and the Hill of Garth. However, regular sightings at Tingon, Scatsta, Beorgs of Skelberry and the various areas on Yell suggest that these sites may be safely considered as breeding sites. The situation on Yell is particularly uncertain as there is no actual confirmation of breeding on the island, and sightings are extremely erratic in both their location and their timing.

### Habitat

Habitat requirements have not been examined in any detail, but most of the sites are very similar in appearance. Typically, sites consist of small, deep, permanent lochans, less than 0.2 ha in extent and set amongst deep peat moorland. The edges of the loch are well vegetated with a growth of emergent vegetation such as rushes Juncaceae and sedges Cyperaceae, and they are not grazed to the water's edge. There is usually an extensive growth of floating vegetation such as pondweeds *Potamogeton*, bur-reeds *Sparganium* or Bogbean *Menyanthes trifoliata* (L.). The presence of floating vegetation is probably one of the most important factors as it is used by the female as a platform for egg-laying. Occasional sighting over larger areas of water may just refer to wanderers from adjacent, smaller pools. Sites such as those described above are not unusual in Shetland. Indeed, every island and parish in Shetland has habitat such as that described. This makes one wonder why damselflies are found in such a restricted area of Shetland.

### Flight Period

Little information is available on the flight period in Shetland. In southern Britain the Common Blue damselfly flies from May to October (Hammond, 1983), but it is likely that they have a shorter flight period in Shetland. Indeed, the erratic nature of sightings even at frequently visited sites suggests that the relatively poor Shetland summer severely restricts the activity of the imagines.

Most sightings in Shetland are in June to August during the course of other fieldwork. The large numbers seen at Many Crooks in North Roe in early June 1992 suggest that this may be the main emergence period in Shetland. There were a number of other sightings elsewhere in the same month, which was unusually warm and sunny. Very few visits will ever have been made to damselfly sites before June or after August. Adult activity probably ceases early in the autumn, most likely following the first autumn gale.

### Dragonfly Records

Three species of dragonfly (sub-order Anisoptera) have occurred as vagrants in Shetland on single occasions.

A Common Hawker *Aeshna juncea* (L.) was collected from Fair Isle on 24.vii.1955 and sent for identification to Cynthia Longfield. Although not a renowned migrant, other members of this genus are, and the Common Hawker does occur as close as Orkney (Berry, 1985).

Another dragonfly was obtained on Fair Isle just three years later when a Four-spotted Chaser *Libellula quadrimaculata* (L.) was recorded in July 1958. This species is a well known migrant from the continent into southern Britain in many years (Hammond, 1983), so its occasional appearance as a vagrant elsewhere is expected.

Finally, a specimen of the African and Asian dragonfly, the Migrant Emperor *Hemianax ephippiger* (Burmeister), another member of the family Aeshnidae, was obtained on Fetlar in about 1970. The specimen is now in The Natural History Museum. Although it is an essentially tropical and subtropical species, this dragonfly is a famous migrant and vagrants occur in variable numbers in Europe every year, although it remains a great rarity anywhere in Britain. It is, in fact, the only species of dragonfly to have occurred in Iceland (Wolff, 1971).

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### References

- Berry, R.J., 1985. *The natural history of Orkney*. Collins, London.  
Godfrey R., 1899. *Enallagma cyathigerum* in Shetland. *Ann. Scot. nat. Hist.* **1899**: 115.  
Hammond, C.O., 1983. *The dragonflies of Great Britain and Ireland*. Harley Books, Colchester.  
Wolff, N.L., 1971. *The Zoology of Iceland, volume 3, part 45, Lepidoptera*. Munksgaard, Copenhagen.